

1. A hand held dental instrument for curing light-curable compounds curable in the mouth of a patient comprising:

a housing;

5 a plurality of solid state, light-emitting dies mounted in a collective array in the housing, the array of dies operable for collectively emitting light having wavelengths within a narrow band of wavelengths and at a power to cure a dental compound;

a clear lens layer encapsulating the array of dies for directing light generated by the array; and

10 a light transmitting device for capturing said light from the array of dies and encapsulating lens layer, and transmitting a beam of the light out of the housing to a work surface.

2. The hand held dental instrument of claim 1 wherein said narrow wavelength band includes a blue light wavelength.
3. The hand held dental instrument of claim 1 wherein said narrow wavelength band includes a wavelength of approximately 470 nanometers.
4. The hand held dental instrument of claim 1 wherein said light transmitting device comprises at least one fiber optic element.
5. The hand held dental instrument of claim 1 wherein said light transmitting device comprises a plurality of fiber optic elements operably coupled together for directing said beam.
6. The hand held dental instrument of claim 1 wherein said light transmitting device has a receiving end and a transmission end, the transmission end being dimensioned smaller than said receiving end for narrowing the light beam captured by said light transmitting device.
7. The hand held dental instrument of claim 1 further comprising a heat sink coupled to said array for directing heat away from the array.

8. A hand held dental instrument for curing light-curable compounds curable in the mouth of a patient comprising:

a housing;

5 a plurality of solid state, light-emitting dies mounted in a collective array in the housing, the array of dies operable for collectively emitting light having wavelengths within a narrow band of wavelengths and at a power to cure a dental compound;

a clear lens layer encapsulating the array of dies for directing light generated by the array; and

10 the housing including a distal end and the array of light-emitting dies being positioned proximate the distal end for transmitting light directly from the array to a compound to be cured.